

REMARKS

Claims 1, 15 and 26 have been amended. Claims 3-11, 17-25, and 28-32 have been cancelled. Claims 33-55 have been added. Claims 1-2, 12-16, 26-27, and 33-55 are pending in the application. Reconsideration is respectfully requested in light of the following remarks.

Section 103(a) and 102(e) Rejections:

Section 2 of the Office Action rejected claims 1, 2, 15, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Keller et al., U.S. Patent Number 6,622,237, (hereinafter “Keller”) in view of Fetterman et al., U.S. Patent Number 5,553,256, (hereinafter “Fetterman”). The Applicants respectfully traverse.

Section 5 of the Office Action rejected claims 26 and 27 under 35 U.S.C. § 102(e) as being anticipated by Keller et al., U.S. Patent Number 6,622,237, (hereinafter “Keller”). The Applicants respectfully traverse.

Amended claim 1 recites, in pertinent part, “the instruction set wherein the instruction set comprises one or more instructions whose data sources and destinations are registers ... including a dependency matrix for storing dependency data of all the in-flight instructions”.

Keller, at column 2, lines 21-26, describes “a store to load forward (STLF) predictor which may indicate, for dispatching loads, a dependency on a store. The dependency is indicated for a store which, during a previous execution, interfered with the execution of the load”. At column 1, lines 17-27, Keller defines “loads” and “stores” as operations that transfer data from main memory to the processor from the processor to main memory or respectively. It is clear that Keller’s STLF predictor stores dependency information only for operations of instructions accessing main memory, i.e. loads and stores. Keller is completely silent on storing dependency data on instructions other than

main memory operations, such as register-only operations, much less all in-flight operations, as presented in claim 1.

Fetterman, at column 7, lines 17-20, describes “instructions have their logical sources and destinations mapped to physical register identifiers in ROB 108 by the RAT 114, and their corresponding uops are written into the entries of the reservation station 118”. This is in contrast to the instruction wait buffer (IWB) of claim 1, which stores all the physical register address data and operation codes needed to execute the in-flight instructions.

Neither Keller nor Fetterman, taken singly or in combination teaches or suggests the superscalar processor features of claim 1. Therefore, the Applicants believe claim 1 and all claims depending therefrom to patentably distinguish over this art.

Claims 15 and 26 recite features, which are similar to those recited in claim 1, and are therefore, likewise believed to patentably distinguish over Keller and Fetterman.

Claims 2, 16, and 27 depend from claims 1, 15, and 26, and are therefore believed to patentably distinguish over Keller and Fetterman for at least the reasons give above with regard to claim 1.

Allowable Subject Matter:

Section 9 of the Office action objected to claims 3 and 17 as being dependent upon rejected base claims, but stated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3 and 17 have been accordingly rewritten as new claims 33 and 42.

Section 10 of the Office action objected to claims 4-11 and 18-25 as being dependent upon rejected base claims, but stated that these claims would be allowable if rewritten including all of the limitations of the base claims and any intervening claims.

Claims 4-11 and 18-25 have been accordingly rewritten as new claims 34-41 and 43-50.

The Applicants acknowledge the allowance of claims 12-14 in section 11 of the Office Action.

Section 12 of the Office action objected to claims 28-32 as being dependent upon a rejected base claim, but stated that these claims would be allowable if rewritten including all of the limitations of the base claim and any intervening claims.

Claims 28-32 have been accordingly rewritten as new claims 51-55.

CONCLUSION

Applicants submit the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681/8600.

Respectfully submitted,



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Date: 9-28-04